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10/633,444	08/01/2003	Michael T. Roeder	200313908-1	4688

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EXAMINER
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YUEN, KAN

ART UNIT	PAPER NUMBER
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2416

NOTIFICATION DATE	DELIVERY MODE
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ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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<b>Office Action Summary</b>	<b>Application No.</b> 10/633,444	<b>Applicant(s)</b> ROEDER, MICHAEL T.	
	<b>Examiner</b> KAN YUEN	<b>Art Unit</b> 2416	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 10 December 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

***Response to Arguments***

1. Applicant's arguments, see Remark, filed on 12/10/2008, with respect to the rejection(s) of claim(s) 1-23 under 103 references have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of (Request for Comments) RFC 792 J. Postel September 1981 in view of Li et al. (Pat No.: 5473599).

***Claim Objections***

2. Claims objected to because of the following informalities:

In claim 4, line 2, the duplicate coma should be removed.

In claim 17, line 7, the term "selection of the router" should be changed to "selection of the routers". Similar problem exists in claim 23, line 7. Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 17, 18 and 23 are rejected under 35 U.S.C. 102(e) as being anticipated by Omae et al. (Pub No.: 2004/0017775).

**In claim 17**, Omae et al. disclosed the method of load balancing between a plurality of routers by automated selection of a router to respond to an ARP request, the method comprising:

receiving an address resolution protocol (ARP) request at the plurality of routers (all nodes on link B) from a requesting host (router A) from a source IP address in relation to a destination IP address (Omae et al. see paragraphs 0004-0006). Router A broadcasts an ARP request packet having an internet protocol address (destination address) of the router B to a link to which the router B is connected. It is inherently to realize that the ARP packet comprises the source IP address of router A;

performing the automated selection of the router to respond to the ARP request; and sending an ARP reply from the responding router to the requesting host applying an algorithm at each router to determine which single router is to respond to the ARP request (Omae et al. see paragraph 0006). The broadcasted ARP request packet is received by all nodes on the link, and the contents of the ARP request packet are analyzed. Of the nodes on the link, the router B confirms that the router B itself is the object (destination object) of the ARP request. On other words, all nodes coupled to the link will analyze (automated selection) the content of the ARP packet, and a single node (router B) will response to the ARP packet; and

sending an ARP reply from the responding router to the requesting host (Omae et al. see paragraph 0006-0007). The router B transmits to the router A an ARP response packet having the MAC address of the router B.

**Regarding claim 18**, Omae et al. disclosed the feature of forwarding a packet from the source IP address to the destination IP address (Omae et al. see paragraph 0006-0009).

**Claim 23 is rejected similar to claim 17.**

### ***Claim Rejections - 35 USC § 103***

5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 19 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Omae et al. (Pub No.: 2004/0017775) in view of Datta et al. (Pat No.: 6295276).

**For claim 21**, Omae et al. did not explicitly disclose the feature wherein the algorithm determines the responding router using a round robin type selection process. Datta et al. from the same or similar fields of endeavor disclosed the feature wherein the algorithm determines the responding router using a round robin type selection process (Datta et al. column 15, lines 1-15).

**Regarding claim 19**, although Datta et al. did not explicitly disclose the algorithm comprises a hash function, however since the round robin algorithm can be perform therefore the other similar types of algorithms such as hash function can also be perform in similar manner.

7. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Omae et al. (Pub No.: 2004/0017775) in view of Datta et al. (Pat No.: 6295276) as applied to claim 19 above, and further in view of Wiryaman et al. (Pat No.: 7010611).

**For claim 20**, Omae et al. and Datta et al. both did not disclose the feature wherein the hash function is a function of the source and destination IP addresses. Wiryaman et al. from the same or similar fields of endeavor disclosed the feature wherein the hash function is a function of the source and destination IP addresses (Wiryaman et al. column 3, lines 20-30). Thus, it would have been obvious to the person of ordinary skill in the art at the time of the invention to use the feature as taught by

Wiryaman et al. in the network of Omae et al. and Datta et al. The motivation for using the feature being that it provides user friendliness for packet classification.

8. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Omae et al. (Pub No.: 2004/0017775) in view of Li et al. (Pat No.: 5473599).

**For claim 22**, Omae et al. did not disclose the feature wherein the algorithm is load based, and further comprising communicating load levels amongst the plurality of routers. Li et al. from the same or similar fields of endeavor disclose the feature wherein the algorithm is load based, and further comprising communicating load levels amongst the plurality of routers (Li et al. see column 8, lines 45-67, column 9, lines 1-42). Thus, it would have been obvious to the person of ordinary skill in the art at the time of the invention to use the feature as taught by Li et al. in the network of Omae et al. The motivation for using the feature being that it shortens the routing path by bypassing transmitting packets directly to the standby router.

9. Claims 1, 4, 6, 7, 13-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over (Request for Comments) RFC 792 J. Postel 1981, in view of Li et al. (Pat No.: 5473599).

**For claim 1**, Postel disclosed the method of load balancing between a plurality of routers by automated resetting of gateways, the method comprising:

receiving a packet at a first router from a source host to be forwarded to a destination host (Postel page 13). A gateway G1 receives an internet datagram from a host on a network to which the gateway is attached;

applying an algorithm at the first router to select a second router to be a next gateway for the source host for packets destined to the destination host (Postel page 13). The gateway G1, checks its routing table (applying algorithm), and obtains the address of the next gateway, G2, on the route to the datagram's internet destination network, X; and

sending an ICMP redirect message from the first router to the source host to reset a default gateway of the source host to be the second router for packets destined to the destination host (Postel page 13). If G2 and the host identified by the internet source address of the datagram are on the same network, an ICMP redirect message is sent to the host. The ICMP redirect message advises the host to send its traffic for network X directly to gateway G2 as this is a shorter path to the destination.

Postel does not explicitly disclose the feature wherein the host reset the default gateway of the source host to be the second router. Li et al. from the same or similar fields of endeavor disclosed the feature wherein the host reset the default gateway of the source host to be the second router (Li et al. column 16, lines 10-25). For example, if the active router receives a packet and decides that the optimal route is through the standby router, the active router could send redirect message to the host. This would tell the host to use the standby router, and the host would then issue an ARP request for the standby router's primary address. Thereafter the host would route packets



through the standby router. Thus, it would have been obvious to the person of ordinary skill in the art at the time of the invention to use the feature as taught by Li et al. in the network of Postel. The motivation for using the feature being that it shortens the routing path by bypassing transmitting packets directly to the standby router.

**Regarding claim 4**, Postel disclosed the feature wherein the algorithm comprises a hash function, wherein an output of the hash function returns an index of a router to be used to route subsequent packets with a same hash value (Postel page 13). The gateway, G1, checks its routing table and obtains (returns) the address of the next gateway, G2. The redirect message advises the host to send its traffic for networks X directly to gateway G2

**Regarding claim 6**, Li et al. disclosed the feature of wherein the algorithm is load based, and further comprising communicating load levels amongst the plurality of routers (Li et al. see column 8, lines 45-67, column 9, lines 1-42).

**Claim 7** is rejected similar to claim 1.

**Regarding claim 13**, Li et al. disclosed the feature wherein the apparatus is configured to communicate load levels to and receive load levels from other routing apparatus, and wherein the selection module applies a load-based algorithm (Li et al. see column 8, lines 45-67, column 9, lines 1-42).

**Regarding claim 14**, Li et al. disclosed the feature wherein the load-based algorithm comprises a weighted hash algorithm (Li et al. see column 8, lines 45-67, column 9, lines 1-42). In the event that two routers having the same priority are seeking the same status, the primary IP addresses of these routers are compared and the router

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having the higher IP address is selected, Wherein the IP address is the weighted hash algorithm.

**Regarding claim 15 and 16**, although Li et al. does not explicitly disclosed wherein the selection module applies the load based algorithm comprises weighted round robin, pseudo-random algorithms, however since the weighted hash algorithm can be perform therefore the other similar types of algorithms can also be perform in similar manner.

10. Claims 2, 3, 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over (Request for Comments) RFC 792 J. Postel 1981, in view of Li et al. (Pat No.: 5473599) as applied to claim 1 above, and further in view of (Request for Comments) RFC 1256 S. Deering 1991.

**For claims 2 and 8**, Postel and Li et al. both did not explicitly disclose the feature wherein the algorithm comprises a pseudo-random algorithm. Deering from the same or similar fields of endeavor disclosed the feature wherein the algorithm comprises a pseudo-random algorithm (Deering page 10). Thus, it would have been obvious to the person of ordinary skill in the art at the time of the invention to use the feature as taught by Deering in the network of Postel and Li et al. The motivation for using the feature being that it provides security in the system.

**Regarding claims 3, 9 and 10**, although Deering does not explicitly disclose the round robin type algorithm or other type of similar algorithms, however since the

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pseudo-random algorithm can be perform therefore the other similar types of algorithms can also be perform in similar manner.

11. Claims 5, 11, 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over (Request for Comments) RFC 792 J. Postel 1981, in view of Li et al. (Pat No.: 5473599) as applied to claim 1 above, and further in view of Wiryaman et al. (Pat No.: 7010611).

**For claim 5, 11 and 12**, Postel, and Li et al. both did not explicitly disclose the feature wherein the hash function is a function of any combination of the IP addresses of the destination and source hosts of the packet. Wiryaman et al. from the same or similar fields of endeavor disclosed the feature wherein the hash function is a function of any combination of the IP addresses of the destination and source hosts of the packet (Wiryaman et al. column 3, lines 20-30). Thus, it would have been obvious to the person of ordinary skill in the art at the time of the invention to use the feature as taught by Wiryaman et al. in the network of Postel and Li et al. The motivation for using the feature being that it provides user friendliness for packet classification.

***Examiner's Note:***

Examiner has cited particular columns and line numbers in the references applied to the claims above for the convenience of the applicant. Although the specified citations are representative of the teachings of the art and are applied to specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully

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requested from the applicant in preparing responses, to fully consider the references in entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the Examiner.

In the case of amending the claimed invention, Applicant is respectfully requested to indicate the portion(s) of the specification which dictate(s) the structure relied on for proper interpretation and also to verify and ascertain the metes and bounds of the claimed invention.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KAN YUEN whose telephone number is (571)270-1413. The examiner can normally be reached on Monday-Friday 10:00a.m-3:00p.m EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky O. Ngo can be reached on 571-272-3139. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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